

ROW.—A female was obtained on St. George Island, September 1, 1913. It has been previously recorded from the group but not collected.

Nannus alascensis. ALASKA WREN.—This wren, long known and so abundant on St. George Island, was found on St. Paul Island in 1914 for the first time, and again in 1915. Five birds were seen on the latter island and three were collected.

THE BIRDS OF VIEQUES ISLAND, PORTO RICO.

ALEXANDER WETMORE.

VIEQUES, called "Bieque or Crab Island," on the older maps lies fourteen miles off the eastern coast of Porto Rico and is the most western of the Virgin group. Notes on the avifauna of this island occur at random through the literature pertaining to the West Indies but no complete list of the birds of Vieques has been attempted. Mr. B. S. Bowdish (1900) has published a few notes on the winter birds of the island but other published matter pertaining to the subject is widely scattered. Though all unusual records are included in the writer's *Birds of Porto Rico* (Wetmore, 1916) it is believed that an annotated list of the birds complete so far as present knowledge permits will be of value to workers interested in this region. Much new matter in the form of hitherto unpublished field notes is included in this paper.

Though Vieques Island was settled first in 1524 little attention appears to have been accorded it by early naturalists. Apotheker Riise of St. Thomas sent a collector across to Vieques about the year 1860 (Newton, 1860): he secured a number of birds among which are recorded the Woodpecker, the Lizard Cuckoo, and one *Molothrus atronitens*. Apparently the island was not visited by an ornithological collector again until 1899 when naturalists from the U. S. Fish Commission Steamer "Fish Hawk" landed there on February 6, 7, and 8. The birds secured were collected by Dr. J. D. Milligan and Mr. A. B. Baker.

Following this Mr. B. S. Bowdish came to the island about

November 5, 1899, and remained until February 10, 1900. Apparently this is the most extended visit which has been made by an ornithologist. His notes on "Some winter birds of the Island of Vieques" (Bowdish, 1900) constitute the only separate paper on the avifauna of this island that has come to my notice.

In this same year (1900) Dr. C. W. Richmond and Dr. L. Stejneger during their sojourn in Porto Rico visited Vieques Island, collecting there from March 22 to 28.

On March 16, 1912, the writer crossed to Vieques Island from Fajardo Porto Rico in a small sloop and remained until April 4. Headquarters were made in the town of Isabel II, a pleasant place with wide streets lined with flamboyant trees (*Poinciana regia*), somewhat in contrast to the narrow *calles* and closely crowded houses common in Porto Rican towns. In addition to this visit two days — April 22 and 23 — were spent here on returning from Culebra. During this work Dr. J. S. M. Pressley and Mr. Harold Stiles who was at that time judge of the district, gave friendly assistance. And in Señor José Bartón, a gentleman well-informed as to the natural history of his native island, I found a pleasant companion on many field excursions.

PHYSICAL FEATURES.

In size Vieques Island is approximately 18 miles long by 3 broad comprising nearly 45 square miles of territory. A chain of low rounded hills extends the length of the island rising in Mount Pirata at the western end to an elevation of about five hundred feet. The low hills slope down directly to the sea with no intervening alluvial coastal plain. In general the south coast line is more abrupt, rocky headlands from 30 to 80 feet in height alternating with small bays bordered by sandy beaches. On the north the elevations are in the main lower and cliffs are less common along the shore line. The hills are of limestone with outcrops of coral rock. Inland granite boulders are scattered in the pastures. The western half of the island has large areas planted in sugar cane and extensive pastures dotted with bushes. The eastern end is wild and little frequented. There low valleys grown with bushes

bound together with thorny creepers are difficult of passage and winding cattle trails afford the only pathways. Many hilltops are densely covered with brush and trees, and on the south coast are considerable areas of virgin forest. Several lagoons fringed with mangroves furnish resorts for water birds. There are small streams on the island but at the time of my visit they had only scattered pools of brackish water along their beds. Pools in the largest stream contained numbers of tadpoles and minnows.

Vieques is a dry island with droughts that at times are unbroken for the space of a year. At the time of my visit quick dashing showers were frequent but were barely sufficient to moisten the surface of the ground. The average rainfall since 1903 ranges from 38.59 inches (1912) to 55.25 inches (1905). Though I found the heat of the sun intense the atmosphere was dry with none of the depressing humidity of the north coast of Porto Rico. The steady refreshing stream of the trade winds moderated the heat and indoors the days were comfortable and cool.

GENERAL CONDITIONS.

In its vegetation and general appearance Vieques is similar to the southern side of Porto Rico. Along the northern shore line the force of the trade winds distorts many of the trees and shrubs. Growths of *uras de playa* (*Coccolobis* sp.), common along the sandy beaches, were as even on the side exposed to the wind as though trimmed by hedge shears. Even the springy *lluma* palm (*Aeria attenuata*) grew prostrate in a few localities and it was not uncommon to see a small deciduous shrub with the branches developed entirely on one side so that it was blown out like a flag in the wind.

Sea grapes (*Coccolobis* sp.) fringed the beaches, and mangroves bordered the lagoons. The pastures were dotted with thorny *asoto caballo* (*Randia aculeata*), a spiny introduced acacia, the *rallo* (*Acacia farnesiana*), and scattered trees of the *muñeco* (*Cordia collococca*). The mango (*Mangifera indica*), *moral* (*Cordia nitida*), *palma de lluma* (*Aeria attenuata*) and bay tree or *ausú* (*Aromis caryophyllata*) were not uncommon. The *palo blanco* (*Drypetes*

sp.) wild figs (*Ficus* sp.) and *cabo de hacha* (*Trichilia hirta*) were prominent in the forests. A milkweed (*Asclepias* sp.) six feet tall with a woody stem was common in some localities and prickly pear (*Opuntia* sp.) and another cactus (*Cercus* sp.) were abundant. At the time of my arrival *Cordia collococca* was in blossom but all of its leaves had fallen, while the flamboyant tree (*Poinciana regia*) an introduced species, was also leafless but was maturing its seeds.

Of indigenous mammals bats alone occur; and the only species noted was a *Molossus*. Others were said to be abundant in certain caves whose locations the natives obstinately refused to divulge. The mongoose (*Mungos birmanicus*) is more abundant than in Porto Rico, but does not seem to keep the rats in check. Lizards are very common. The *iguana* (*Ameiva exul*) was found along the beaches and small anolis (*Anolis cristatellus* and *A. stratulus*) were abundant everywhere. A few adult individuals and many tadpoles of the frog-like *Leptodactylus albilabris* were seen and the *coquí* (*Eleutherodactylus antillensis*) was heard calling occasionally in the evening.

BIRD LIFE.

Though separated from Porto Rico by a strait only 14 miles wide the avifauna of Vieques shows certain differences from that of the larger island. Certain Greater Antillean forms are lacking while a few others ranging up through the Lesser Antilles apparently find here their farthest westward extension. Of the sixty-five species of birds which are credited to the island in the following list there are actual records for fifty-five. Ten other forms of undoubted occurrence are included as reported by hunters or from other sources. Eighteen of the species listed are North American migrants present here in migration or through the winter. Two species, *Saurothera vicilloti* and *Molothrus atronitens* may be regarded as stragglers arriving here merely by chance. The following three forms are not known at present to visit Porto Rico:

Microlyssa c. exilis.

Sericotes h. holosericeus.

Elainca m. martinica.

Of the twenty-five species and subspecies of birds that are restricted to Porto Rico (here taken as a political division including Mona, Desecheo, Porto Rico, Vieques and Culebra) the following nine occur on Vieques:

Amazona vittata (?) (reported)
Saurothera vicilloti (one record)
Melanerpes portoricensis
Gymnasio nudipes (?) (reported)
Tolmarchus taylori
Myiarchus antillarum
Dendroica adalaidæ
Holoquiscalus brachypterus
Tiaris o. bryanti

Opposed to these are sixteen forms precinctive in Porto Rico which are not known to cross to Vieques Island. Among them are several genera typical of the Greater Antilles. The list of these missing forms is as follows:

Accipiter striatus venator
Chamepelia p. exigua (Mona Island)
Todus mexicanus
Asio portoricensis
Chlorostilbon maugæi
Anthracothonax viridis
Blacicus blancoi
Mimocichla a. portoricensis
Corvus l. leucognaphalus
Vireo latimeri
Icterus portoricensis
Agelaius xanthomus
Tanagra selateri (introduced into Vieques?)
Spindalis portoricensis
Nesospingus speculiferus
Pyrrhulagra portoricensis

The avifauna then resembles that of Porto Rico closely with the addition of three forms that are not at present known to cross the

passage to the larger island. This same strait, though only from 6 to 11 fathoms deep, is a barrier to fifteen of the Greater Antillean forms found on Porto Rico, while of the nine forms that do cross three are of uncertain status as bona fide species for Vieques Island.

MIGRATION.

Two of the breeding birds of the island are migratory, viz., *Progne dominicensis*, and *Vireosylva c. calidris*. A third, *Elainia m. martinica* is believed to be only a summer visitant not a resident. The first two probably arrive in February; the last was not noted until March 25, 1912.

Among the North American migrant Warblers there was almost constant movement during my visit. These birds always seemed restless and a diurnal migration from east to west along the length of the island was noticed. On March 19, March 27, and again on April 2 true waves of migration occurred and these birds were exceptionally common and active. Parula and Prairie Warblers, Ovenbirds, Redstarts and Black and White Warblers were all affected in this movement. In each case the bulk of these birds disappeared at once and they were present in their usual numbers during the following days. Vieques Island forms a stepping stone for the individuals that winter in the Lesser Antilles, in their vernal and autumnal flights and many interesting observations might be made here by a resident ornithologist. Many species may be added to the migrants given in the following list, especially among the shorebirds and warblers and stragglers are to be expected in all groups.

BIBLIOGRAPHY.

In the following books and papers are found the more important references to the avifauna of Vieques Island. I am indebted to Dr. C. W. Richmond for certain manuscript notes made during the course of his work on the island.

BOWDISH, B. S.

1900. Some winter birds of the Island of Vieques. *Oologist*, XVII, May, 1900, 71-74.

1902. The Carib grassquit (*Euelthia bicolor omissa*). Osprey, I (new series), March, 1902, 45-48.
- 1902-3. Birds of Porto Rico. Auk, XIX, October, 1902, 356-366, and XX, January, 1903, 10-23.
- CORY, CHARLES B.
1892. Catalogue of West Indian Birds, Boston, 1892.
- LOWE, P. R.
1912. Observations on the genus *Cæreba* together with an annotated list of the species. Ibis, July, 1912, 489-528, with map and colored plate.
- NEWTON, ALFRED.
1860. A letter upon the birds of St. Croix and neighboring Islands. Ibis, July, 1860, 308.
- RIDGWAY, ROBERT.
1901-1916. The Birds of North and Middle America. Bull. 50, U. S. Nat. Mus., Vol. I to VII. (Others to appear later.)
- RILEY, J. H.
1904. Catalogue of a Collection of Birds from Barbuda and Antigua, British West Indies. Smithsonian Misc. Coll., 47, Part 2, Nov. 8, 1904, 277-291.
- WETMORE, ALEX.
1916. The birds of Porto Rico. Bull. 326, U. S. Dept. Agr., March, 1916.

ANNOTATED LIST.

1. **Podilymbus podiceps antillarum** Bangs. ANTILLEAN PIED-BILLED GREBE.—A grebe known as the zaramagullon was reported from the lagoon at Playa Grande on the western end of the island. As the lagoons on Vieques are dry some seasons the birds may not breed there.
2. **Pelecanus occidentalis** Linnæus. BROWN PELICAN.—During my residence on Vieques Island there were usually a few pelicans in Port Mulas at Isabel II. Others were seen flying elsewhere along the shore. At times they are said to disappear entirely for a week or more and appear again suddenly in small numbers. The islet known as Caballo Blanco off Port Mulas, rising three feet above the sea, with its top scantily covered with vegetation, is reputed to harbor a breeding colony, but in passing near it in a small sloop on April 23 I could see no sign of pelicans.
3. **Sula leucogastra** (Boddaert). BOOBY.—The Booby was reported as an occasional visitant to the shores of the island.
4. **Fregata magnificens** Matthews. MAN-O'-WAR-BIRD.—Frigate birds were seen soaring high over the sea near Manuel Quí and also at Campania. Mr. Bowdish (1900) records them also.
5. **Nyctanassa violacea** (Linnæus). YELLOW-CROWNED NIGHT HERON.—Resident. In a dry swamp near Manuel Quí I found a few pairs of Yaboas roosting in the middle of the day in the dense heavy shel-

ter of the forest growth. When flushed they flew heavily for a short distance and then perched again in the tree tops, seeming rather stupid. They are considered a game bird.

6. ***Butorides virescens cubanus*** Oberholser. CUBAN GREEN HERON.—Resident. Mr. Bowdish found the Green Heron very abundant at the mouths of small streams. In 1912 though fairly common it did not compare in abundance with the numbers found on Porto Rico. There were few places suited for it, as cover was not common along the small streams. One immature bird rather than fly attempted to escape by clambering rapidly away through the branches of a clump of mangroves. Two adults were secured on March 27 and an immature male on March 30.

7. ***Florida cærulea cærulescens*** (Latham). LITTLE BLUE HERON.—Resident. This species was the only heron that was common on the island. It was seen often along the coast and many were found inland in the high dry pastures. An adult male was taken on March 29.

8. ***Egretta thula thula*** (Molina). SNOWY HERON.—A few were seen along the beaches, around the lagoons, and at the mouths of the streams. They were in full breeding plumage at this season. A bird seen near Manuel Quí on March 25 was very tame.

9. ***Herodias egretta*** (Gmelin). EGRET.—Reported by José Bartón. [***Phoenicopterus ruber*** Linnæus. FLAMINGO.—Gundlach¹ remarks that the flamingo is said to have been common on the small islands east of Porto Rico. There are unconfirmed rumors of the former occurrence of this bird on Vieques Island.]

10. ***Marila affinis*** (Eyton). LESSER SCAUP DUCK.—Reported as occasional in winter.

11. ***Dendrocygna arborea*** (Linnæus). WEST INDIAN TREE DUCK.—Tree ducks (Yaguasas) were said to occur at times on the larger lagoons.²

12. ***Falco sparverius loquacula*** Riley. PORTO RICAN SPARROW HAWK.—Resident. Sparrow Hawks were fairly common in the tree dotted pastures of Vieques. Tops of small trees or dead stubs made convenient perches from which they watched for lizards and large Orthoptera. Their numbers here must be regulated by the small number of available nesting holes. Vieques Island is the type locality of this form (cf. Riley, 1904, p. 284). In a small series collected, one male taken March 27 has the distal end of the rectrices much worn from clinging at a nesting hole or, questionably, from actually assisting in the duties of incubation.

13. ***Buteo borealis*** (Gmelin). RED-TAILED HAWK.—Resident. A few Red-tailed Hawks were noted in the wilder parts of the island toward the eastern end. A nest in a tree 40 feet from the ground was said to have contained young two-thirds grown on March 10. The shrill scream of these birds was heard almost daily. It is doubtful if there are more than

¹ Apuntes para la Fauna Puerto Riqueña, An. Soc. Esp. Hist. Nat., Madrid, 1878, p. 398.

² This species was listed by me from Porto Rico as *D. autumnalis* through error (Wetmore, 1916, p. 30).

ten or a dozen remaining on the island. The species has been much persecuted.

14. **Pandion haliaëtus carolinensis** (Gmelin). OSPREY.—Bowdish (1900, p. 72) secured a male on December 31, 1899, and says that two pairs were seen. Probably a regular winter visitant.

15. **Gallinula galeata galeata** (Lichtenstein). FLORIDA GALLINULE.—Hunters reported that this bird was found on the lagoons when they were filled with water.

16. **Rallus longirostris caribæus** Ridgway. CARIBBEAN CLAPPER RAIL.—Resident. Tracks of these birds were seen in the mud bordering the lagoons.

17. **Eupoda wilsonia rufinucha** (Ridgway). RUFOUS-NAPED PLOVER.—Mr. Bowdish found these birds at times in flocks of a dozen upon the beaches until December 1, 1899. One was taken on November 5. Dr. Richmond noted them on March 23, 1900, and secured three on March 27. None were found during my visit to the island.

18. **Charadrius semipalmatus** (Bonaparte). SEMIPALMATED PLOVER.—Migrant. On March 30, one was seen on the beach on the north side of the island. When flushed it passed out of sight across the water going due north.

19. **Oxyechus vociferus rubidus** Riley. ANTILLEAN KILLDEER.—One was seen near Martínez on March 16. On March 23 two were flushed along a small stream and flew calling loudly over a pasture. These two were collected and were found to be male and female. The latter contained an egg nearly ready for the shell. The Killdeer may be considered as a resident here.

20. **Actitis macularia** (Linnaeus). SPOTTED SANDPIPER.—Fairly common as a winter visitant along small streams and beaches. Individuals were seen until the time of my departure for Culebra on April 4.

21. **Totanus flavipes** (Gmelin). LESSER YELLOW-LEGS.—The only record for this bird is that of one seen on March 25, 1900, by Dr. C. W. Richmond. There is no reason to believe that it is not a regular migrant.

22. **Himantopus mexicanus** (Müller). BLACK-NECKED STILT.—These birds were reported to Dr. C. W. Richmond on March 24, 1900, by Lieutenant Chapelle as seen around the lagoon at Playa Grande.

23. **Larus atricilla** (Linnaeus). LAUGHING GULL.—On April 22 one was seen in Port Mulas at Isabel II.

24. **Sterna maxima** Boddaert. ROYAL TERN.—A few were noted along the coast during March and April.

25. **Geotrygon montana** (Linnaeus). RUDDY QUAIL-DOVE.—The Quail-Dove was said to be fairly common on Vieques Island, but none were seen. As the mongoose is now so abundant these doves may have decreased in numbers during recent years. Mr. Bowdish (1902-3, p. 361) secured a male on December 30, 1899, and Señor José Bartón told me that he found them in the brushy region of the eastern end of the island.

26. **Chamepelia passerina trochila** Bonaparte. PORTO RICAN

GROUND DOVE.—Resident. This species was very abundant in the roads that cut the cane fields into great squares and was common along trails and in pastures. Usually the birds were in pairs but small flocks were found even up to the first of April. They seemed to prefer the heat of midday to the cooler morning and evening. A heavy dew usually held them inactive until it had dried. They perch readily in open trees sitting close together. When they feel under observation they become nervous at once, walking along the limbs with nodding heads. Then suddenly taking alarm they fly out with considerable noise.

The breeding season here began about March 20. As I have already noted (Wetmore, 1916, p. 49) the nests found on Vieques Island were larger and bulkier than those from Porto Rico. On March 30 I collected a set of two eggs with incubation just begun, from a nest on the horizontal limb of a *Muñeco* (*Cordia collococca*), about seven feet from the ground. This nest contained more material than any other dove's nest that has come under my observation and in form was deep, cup-shaped and thick-walled. The male was engaged in incubation. On this same date another nest similar to the first one but as yet empty was discovered.

These doves are said at times to pick up kernels of corn shelled out and dropped by the blackbirds (*Holotrisacus brachypterus*) but I did not observe them doing this.

27. *Zenaida zenaida lucida* Noble. ZENALDA DOVE.—Resident. Very common in the dense growth of the dry heavily forested hills and found frequently in the brushy pastures. In the forests it was hard to get near them, only the loud clapping of their wings betraying them as they flushed at some distance ahead. March was apparently the height of their breeding season and the males were heard cooing constantly, a song very similar to that of *Zenaidura macroura*. In May and June they are said to come in flocks to feed on the fruit of the *Palo blanco* (*Drypetes* sp.). Many are shot by sportsmen at this time. This bird is recorded by Mr. Bowditch through an error as the Mourning Dove (1900, p. 72).

28. *Patagioenas leucocephala* (Linnaeus). WHITE-CROWNED PIGEON.—Resident. On March 25 this pigeon was fairly common in a strip of heavy swampy timber near Porto Ferro. Their flight was strong and swift and while in the trees they sat motionless, hidden in the leafy branches. One was taken. Near Mameyes on Porto Rico these pigeons were known locally as "Viequera" from the belief that they did not nest on the main island but crossed from Vieques when the *icacos* (*Chrysobalanus icaco*) were ripe in order to feed upon them. Their fondness for this fruit at Mameyes was noticeable but they nested without doubt in the same locality as that in which they were feeding. Ordinarily this pigeon bears the native name of *Paloma cabeziblanco*. In May and June when various wild fruits are ripe they come out of the swamps in large flocks and gather to feed in localities in which they are unknown during the breeding season.

29. *Patagioenas squamosa* (Bonneterre). SCALED PIGEON.—Formerly these large pigeons were common but now there are only a few re-

maining. One was seen near Porto Ferro on March 25, 1912. Dr. C. W. Richmond secured one on March 28, 1900.

[**Aratinga** sp.—A paroquet was said to occur on the island occasionally during the rainy season in the months of June, July, and August, but I was unable to substantiate these reports. It is barely possible that *Eupsitula pertinax* from St. Thomas might cross with the trade winds as the islands lie within sight of each other. Gundlach¹ heard of a paroquet on Vieques Island.]

30. **Amazona vittata** (Boddaert) (?). PORTO RICAN PARROT.—Parrots are found during the rainy season in the months of June, July and August in the heavy forest of the southern side of the island. It is believed that they cross at that season from Porto Rico. Señor José Bartón was well acquainted with them and told me that they were considered a game bird, making a highly desirable dish for the table. There were none here during the period of my visit.

31. **Coccyzus minor nesiotus** (Cabanis). MANGROVE CUCKOO.—Resident. In thick brushy growths on the southern side of Vieques Island these cuckoos were common but were difficult to secure. Their notes came frequently from the dense, dry, thorny thickets lying in the intense blazing heat of the sun, but the birds themselves, working slowly and methodically through the bushes usually near the ground, were not often seen. The last week in March marked the beginning of the breeding season here. Specimens were taken on March 25.

32. **Saurothera vieilloti** Bonaparte. VIEILLOR'S GROUND CUCKOO.—The only record of this bird for Vieques Island is that of A. and E. Newton (Ibis 1859, p. 378) who note that a collector in the employ of Apotheker Riise of St. Thomas secured one here. It can be regarded only as a straggler though it is possible that the bird may have been resident here formerly.

33. **Crotophaga ani** Linnaeus. ANI.—A fairly common resident of the brushy pastures. The Ani was found in flocks of six or eight feeding near the cattle or sitting in the tops of bushes calling querulously at the appearance of an intruder. A nest found the last week in March was built in a clump of thorny bushes about six feet from the ground. It was made of twigs and was large and bulky, forming a mass two feet across. The interior was still unfinished. Anis were taken on March 20, 23, 25 and 30.

34. **Melanerpes portoricensis** (Audin). PORTO RICAN WOODPECKER.—A common resident species in the forest regions of the island. On March 25 one was seen feeding well grown young in a hole in a stub about twenty feet from the ground. The woodpeckers were all nesting at this time and were very noisy and vociferous. Specimens were secured on March 18, 19, 25 and 29.

35. **Streptoceryle alcyon alcyon** (Linnaeus). BELTED KINGFISHER.—A regular migrant and winter visitant. Mr. Bowdish (1900, p. 72) secured a male on December 10, 1899. I shot one on March 30, 1912, and

¹ Apuntes para la Fauna Puerto Riqueña, An. Soc. Esp. Hist. Nat., Madrid, 1878, p. 229.

the birds were seen until April 4 when I left the island. They were found along the beaches and near the small streams where in shallow pools minnows and tadpoles were abundant. An incident in which a wing tipped kingfisher figured stands out clearly in my remembrances of Vieques. The bird made into a thicket of thorny bushes and to prevent its escape I laid my gun on it only to discover that I had also dropped it across a wasp's nest.

36. **Gymnasio nudipes** (Daudin) (?). BARE-LEGGED OWL.—Señor José Bartón told of seeing one of these small owls at close range in the hills at the eastern end of Vieques a number of years ago. This bird may have been true *nudipes* or the subspecies *newtoni*, as St. Croix is only a short distance away, or it is possible that a new form may exist here.

37. **Antrostomus carolinensis** (Gmelin). CHUCK-WILL'S-WIDOW.—A migrant species probably of regular occurrence in winter. Mr. B. S. Bowdish (1902-3, p. 365) shot two of these birds in a creek-bottom on December 15 and 28, 1899, and saw others.

38. **Microlyssa exilis exilis** (Gmelin). GILT-CRESTED HUMMINGBIRD.—This bird was fairly common on Vieques Island during my stay and I considered it a resident. It may be however that it is a migrant as Mr. Bowdish does not record it nor had it been found here previous to my visit. The first bird that I collected on the island was this beautiful crested hummer and in suitable localities it was fairly common. The blossoms of the Muñeco (*Cordia collococca*) were attractive to them and others were found about the thorny acacia known as *rallo* (*Vachellia farnesiana*). With other hummingbirds they visited the cultivated *gonduros* (*Cajanus cajan*). They were quick and active and the flight was accompanied by a loud buzzing or humming. Except for this they were silent. Specimens were taken March 18, 19, 23, and 29.

This species has been recorded from Porto Rico (cf. Wetmore, 1916, p. 70) on the strength of specimens sent by Hjalmarson to Sundevall and one of these is at present in the U. S. National Museum collection. Gundlach¹ however considers that these skins may have come from St. Bartholomew and remarks as follows (loc. cit.):

"En mi segundo viaje . . . volví a ver . . . el ejemplar de la coleccion de Hjalmarson en Arecibo, y encontré que tení una tarjeta con la palabra Saint Bartholome, escrita por otra persona y no por Hjalmarson, quien preguntado por mi de nuevo, me dijo que no se acordaba sí el habia tenido ejemplares muertos en la isla de Puerto Rico, o sí los ejemplares vistos por Sundevall habian provenido de la de Saint Bartholome u otra, y habian dada, como enviados de él, motivo a creerlos puerto-riqueños."

39. **Sericotes holosericeus holosericeus** (Linnaeus). GREEN CARIB.—A common resident species though like the Gilt-crested Hummer it may be a migrant as it was not known from Vieques Island previous to my visit.

¹ Apuntes para la Fauna Puerto-Riqueña, An. Soc. Esp. Hist. Nat., Madrid, 1878, p. 224.

These hummers were found usually in the forested areas, and remained in the shade during the heat of the day. The flowers of the *Gonduro* (*Cajanus cajan*) were their favorite feeding grounds and nearly all of my specimens were taken about these growths. These hummingbirds are large and though they flew with great rapidity, were not so active as the other species. Specimens were secured on March 18 and 23. From observations made on March 23, females were feeding young at that date so that the nesting season here must be rather early. In tropical regions however, dates of nest-building and reproduction seem liable to variation from year to year through influences which to us are not perceptible or have not as yet been noted. So that generalizations based on the observations of a single season are not in my opinion altogether trustworthy but should be checked by notes made during a period of years.

40. ***Anthracothorax aurulentus*** (Audebert and Vieillot). PORTO RICAN MANGO.—Resident. On Vieques wherever there were flowers I was certain to find hummingbirds and of all the species on the island the present one was the most common. The flowers of the *Molinillo* (*Leonotis* sp.) were more attractive to this bird than to the other forms. These hummingbirds are large and robust and when perched appear as big as honey-creepers. The young were fully grown on my arrival and were caring for themselves. Specimens were shot on March 18 and 19.

41. ***Tyrannus dominicensis dominicensis*** (Gmelin). GRAY KING-BIRD.—A common resident in the brushy pastures. Birds were taken for specimens on March 19, 20, 22, and 23.

42. ***Tolmarchus taylori*** (Selater). PORTO RICAN PETCHARY.—A tolerably common resident. These birds frequented the larger trees of the forest growth and were not found elsewhere on the island. A pair observed on March 28 were evidently mated and I considered this the beginning of the breeding season. Birds were taken on March 18, 21, 25 and 29.

43. ***Myiarchus antillarum*** (Bryant). ANTILLEAN FLYCATCHER.—A tolerably common resident found in the densest forest growth of the dry hills or in the more open luxuriant growth along the small stream beds. A mated pair was seen on March 23 and following this other indications of the beginning of the breeding season were noticed. This flycatcher resembles a Wood Pewee superficially in both appearance and habits. Specimens were taken on March 18, 23, 25 and 27.

44. ***Elainea martinica martinica*** (Linnæus). ANTILLEAN ELAINEA.—This species seemed to be a migrant here as it was not found until March 25 after which it was more or less in evidence constantly in the proper localities. It has not been found by previous collectors on the island, a fact that strengthens the belief that it is migratory. The birds secured were ready to nest and were found in almost impenetrable thorny growths covering many of the dry hot slopes. Their strange habits were of great interest. One would sally out into the air after an insect and on returning to its perch remain motionless for a minute or two like a flycatcher. Then

in another instant it would begin to search the smaller limbs in vireo fashion or even climb about as a tufted titmouse might do. Numerically this species was small as not more than a dozen were noted on Vieques Island. Collecting specimens was a matter of considerable labor as, once heard, it was necessary to cut paths into the dense spiny growth in order to catch sight of the bird. And when one was shot a trail had to be cut in through the cactus and creepers to where it lay so that the few secured were hard earned. Birds were taken on March 25 and 27.

45. **Progne dominicensis** (Gmelin). CARIBBEAN MARTIN.—One or two pairs of Martins were seen around the town of Isabel II, but they did not spread into the country. This species does not winter here. Mr. Bowditch (1900, p. 74) says that a few were seen just before his departure from the island (Feb. 10, 1900); and this date may approximate the average date of their arrival, though in some years they may be found earlier.

46. **Margarops fuscatus fuscatus** (Vieillot). PEARLY-EYED THRASHER.—Resident. The *truche*, as it was called locally, was common in the thickets, frequenting the dry creek beds and the ravines especially. Its broken whistled notes were heard often while in the country and the birds, slipping away through the bushes, were a common sight. This species is large and robust in body and is hunted at times for food or game. Nothing was learned of its nidification. One male secured March 21 was a breeding bird but in twelve other males collected the sexual organs showed no signs of approaching physiological activity. No females were secured. Birds were taken March 18, 21, 27 and 29.

47. **Mimus polyglottos orpheus** (Linnaeus). JAMAICAN MOCKING-BIRD.—A very common resident species. The dry brushy growth of Vieques Island seemed well suited to the needs of this bird and all through the pastures and fields it was common. The males sang constantly from the tops of the trees lifting their wings or flying from bush to bush with exaggerated movements to accentuate the handsome display of their snowy white alar markings. My visit coincided with the height of the breeding season and frequently a pair scolded harshly from the shelter of some thick bush only to slip slyly away on the opposite side when approached. A nest containing four young nearly a week old was seen on April 3. Many of these birds are kept as cagebirds in inclosures varying from the ordinary wire bird cage to a large calabash (*Crescentia cujete*) with the side cut out and string laced back and forth across the opening to retain the captive. The birds were fed in confinement on bananas, boiled eggs and cornmeal cooked without salt. Specimens were taken March 18, 20, 21, 22 and 30.

48. **Vireosylva calidris calidris** (Linnaeus). JAMAICAN VIREO.—A summer visitant having a local distribution on the island probably due to the small number present and to the limited area inhabited by each pair during the breeding season. On the south coast these vireos were found in several localities but on the northern side they were noted only along one small gully. Specimens were collected on March 20, 22 and 25.

49. **Setophaga ruticilla** (Linnæus). REDSTART.—Fairly common as a winter visitant; more abundant during migration. Mr. Bowdish (1902-3, p. 19) noted redstarts on November 30, 1899, and I found them here until the time of my departure (April 4). On March 27 they were abundant.

50. **Seiurus motacilla** (Vieillot). LOUISIANA WATER-THRUSH.—A winter visitant. One or two were seen occasionally up to March 27. Mr. Bowdish (1902-3, p. 19) secured specimens on December 27, 1899, and January 22, 1900. Mr. A. B. Baker of the "Fishhawk" secured a female on February 7, 1899.

51. **Seiurus aurocapillus** (Linnæus). OVENBIRD.—A tolerably common winter visitant more common apparently during migration. Ovenbirds frequented the ground in sheltered areas in the dry thickets and when flushed went up into the bushes but in a few minutes dropped down and began feeding again. On March 19 and again on March 27 they were especially common. They were not observed after the latter date. One specimen secured was very pale in color. Birds were taken on March 19 and 20.

52. **Dendroica discolor** (Vieillot). PRAIRIE WARBLER.—A common winter visitant. Dry brushy areas seemed especially suited to these warblers. They were found feeding on the ground in the thickets or working quickly through the smaller branches. On March 19 and 27 they were especially common and were then in migration. Small flocks or single birds were observed during these days always working steadily to the westward. They were present in numbers to the time of my departure on April 4. Specimens were secured on March 19 and 25.

53. **Dendroica adelaidæ** Baird. ADELAIDE'S WARBLER.—A fairly common resident on Vieques Island. As noted previously (Wetmore, 1916, p. 103) this species was not known until 1912 outside of Porto Rico. The birds were locally common in the brush grown valleys on the northern side of the island and in the hot dry region of the south coast. They worked actively through the dense tangles of vines, the males giving their loud trilling songs frequently, but were difficult to locate. In the bushes they fed near the ground occasionally dropping down to the earth after an insect that had eluded capture in the limbs above. The first pair taken on March 20 were in worn breeding plumage but others taken later were in better condition, though all were breeding or about to do so. Others were taken on March 21 and 25. Specimens from Vieques Island differ in no way from the larger series secured on Porto Rico.

54. **Dendroica coronata** (Linnæus). MYRTLE WARBLER.—A tolerably common winter visitant. Mr. Bowdish (1902-3, p. 18) secured specimens on January 22 and 30, 1900, and I saw one in the town of Isabel II on April 1, 1912.

55. **Dendroica cærulescens cærulescens** (Gmelin). BLACK-THROATED BLUE WARBLER.—A male was observed but not taken on March 27, 1912. There is no other record for this bird. It probably occurs with more or less regularity during migration.

56. **Dendroica tigrina** (Gmelin). CAPE MAY WARBLER.—One was seen on April 4 in a flamboyant tree (*Poinciana regia*) in front of my temporary residence in Isabel II. It was not secured because of a regulation against shooting but was watched at close range for several minutes.

57. **Dendroica petechia bartholemica** (Sundevall). PORTO RICAN YELLOW WARBLER.—A common resident that occurred wherever trees or bushes offered it shelter. The scattered trees, trimmed symmetrically beneath by browsing cattle, growing in the upland pastures were favorite haunts; and many of these warblers came even into the town of Isabel II attracted by the shade trees growing along the streets. In spite of their yellow color and active movements it was difficult to see them in the leaves, constantly agitated by the trade winds. Specimens secured March 19 and 20 showed no enlargement of the sexual organs.

58. **Compsothlypis americana usneæ** Brewster. NORTHERN PARULA WARBLER.—A common winter visitant. During my stay on the island the spring migration was in full force and these birds outnumbered any of the other warblers. The blossoming *Muñeco* trees (*Cordia alliodora*) with the many insects about the flowers were great attractions and around these trees the birds were especially common. The plumage at this season was perfect, the feathers showing a gloss or sheen. Specimens were secured on March 18 near Isabel II, on March 20 and 25 near Porto Ferro, on March 27 at Manuel Quí and on the twenty-ninth at Porto Ferro again. All are referred to the subspecies *usneæ* of Brewster. The birds were common until my departure on April 4.

59. **Mniotilta varia** (Linnæus). BLACK AND WHITE WARBLER.—Mr. Bowdish found this species during the winter on Vieques Island and Dr. Richmond (MS) saw a specimen in his collection collected January 30, 1900. I saw one on March 27 near Porto Ferro and another March 29 but secured no specimens.

60. **Cœreba portoricensis** (Bryant). PORTO RICAN HONEY CREEPER.—A common resident species not so abundant as in Porto Rico. Honey Creepers were found in the forest growths and in scattered groves of trees wherever there were suitable conditions but were rarely associated in numbers. A few were encountered along the borders of canefields and hedges of *maya* (*Bromelia pinguin*). The largest numbers gathered at the season of my visit in the *muñeco* trees (*Cordia alliodora*) in whose blossoms they found an abundant supply of nectar, small insects and spiders. At the hotel in Isabel II one came in daily to search cut flowers placed in vases. A large mirror puzzled this bird greatly and it frequently perched before it to examine the bird and the room reflected in it, ending invariably in an attempt to enter. Always the bird on the other side came up to meet it and after trying to evade it first on one side and then on the other the bird would drop back and scold its reflection sharply with rapidly flitting wings. Several young birds still having a yellow superciliary were taken and adults, which from evidence gained by examining the sexual organs, were about to breed again. Skins from Vieques are apparently identical with those

from Porto Rico. Birds were taken on March 18, 19, 20, 22, 23, 25, 27, 29, and 30.

61. **Dolichonyx oryzivorus** (Linnaeus). BOBOLINK.—Apparently a rare migrant. Gundlach¹ says that the Bobolink has been taken on Vieques Island and Cory (1892, p. 110) also reports it.

[**Icterus portoricensis** (Bryant). PORTO RICAN ORIOLE.—It would seem that the record for this bird given by Mr. Bowdish (1902-3, p. 12) was a *lapsus*. The same author remarks in the 'Oölogist' for 1900, page 73, that the Porto Rican Oriole was not found. Personally I could find no one to whom they were known on Vieques.]

62. **Holoquiscalus brachypterus** (Cassin). PORTO RICAN BLACK-BIRD.—Resident. Though during his visit Mr. Bowdish (1900, p. 73) found this blackbird common and frequently associated in large flocks, in 1912 it was only tolerably common and was very local in its distribution. It seemed to prefer the more open regions immediately at the coast but one flock of half a dozen was seen in a dense thicket. Birds were secured on March 19, 21 and 29.

63. **Molothrus atronitens** Cabanis. GLOSSY COWBIRD.—Accidental. One is recorded by Newton (Ibis, 1860, p. 308) as obtained from Vieques Island by Mr. Riise of St. Thomas.

[**Tanagra sclateri** (Sundevall). PORTO RICAN EUPHONIA.—I was told that late in the fall of 1910 Mr. Reed then Presbyterian minister at Isabel II made an attempt to introduce this species into Vieques. Forty birds were purchased in Ponce and of these a dozen were accidentally released on the playa at Port Mulas as they were brought ashore. The others were kept in confinement but during the next few months escaped a few at a time. A few remained around Mr. Reed's house for some time and three months after the departure of the captives a flock of twelve was seen. Since this they have disappeared entirely.]

64. **Tiaris bicolor omissa** (Jardine). CARIB GRASSQUIT.—A common resident. A few of these grassquits were found in sheltered draws feeding on the ground under the bushes but the greater number were associated, fifteen or twenty together, with the other grassquits in grass-grown openings in the brush. When disturbed they flew up into the bushes and worked away ahead of me with soft call-notes or if I remained quiet dropped to the ground again to continue feeding. Though molting slightly birds taken seemed to be about to breed. Specimens were taken on March 18, 21, 22, 23, 25 and 27.

65. **Tiaris olivacea bryanti** (Ridgway). BRYANT'S GRASSQUIT.—A common resident. A few were found along the roads running through the cane but most of these grassquits were in mixed flocks with the preceding species. All of the specimens examined were undergoing a partial molt and there was no indication among them that the breeding season was near. Birds were secured on March 18, 22 and 23.

¹ Ornithologia Cubana, 1893, p. 118.